



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D407-667-105
Job Sheet 180862



Part No: D407-667-105

Job Qty: 1 ea

Part Name: Fwd Crosstube - High 407



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 7/17/18

Job Tracking No:

Due Date: 8/15/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG DSI9565 REV A , DSI9628 REV A , D407-667-145 REV C (DEO) IPP Rev:F 05.09.01Add holes for comp. w/ Bell Skids KJ/JLM IPP Rev:G 08-05-16 chg QC6 to QC15 DD verf:EC IPP Rev:H 08-06-03 update per DSI9415 (ECN1198) DD verf:ec IPP Rev:I 08-07-14 add (scribe inside of tube) seq.6 DD verf:EC IPP Rev:J 08-07-28 update per (par 08-013) DD verf:EC IPP Rev K 09.01.06 ECN 08-562 EC verf:DD IPP REV:L 11.08.05 PER ECN 11-615 DD VERF:EC IPP REV:M 12.08.20 DSI9628 revA (ECN12-631) DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	8/15/18	8/15/18	0.00	0.00	Start Up Stores/Pkg-1		GP 2018-09-25
110	Packaging	1 pcs	8/15/18	8/15/18	0.00	0.00	Packaging1-4		GP 2018-09-25
120	CNC Bend Crosstubes	1 pcs	8/15/18	8/15/18	3.77	2.50	CNC Bend Crosstube		GP 2018-09-25
130	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC15		
140	Crosstubes	1 pcs	8/15/18	8/15/18	0.00	1.28	Crosstubes-2		
150	HandFXtube	1 pcs	8/15/18	8/15/18	0.00	0.36	HandFinish5		
160	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC5		
170	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC7-3		
180	Outsource	1 pcs	8/15/18	8/15/18			SKY002-VC		
190	Packaging	1 pcs	8/15/18	8/15/18	0.00	0.00	Packaging2		
200	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC6		
210	SprayPaint	1 pcs	8/15/18	8/15/18	0.00	0.25	Spray Paint		
220	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC14		
230	Crosstubes	1 pcs	8/15/18	8/15/18	0.00	1.52	Crosstubes-2		
240	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC5		
250	Packaging	1 pcs	8/15/18	8/15/18	0.00	0.00	Packaging1-4		
260	QC	1 pcs	8/15/18	8/15/18	0.00	0.00	QC4		
265	DC	1 pcs	8/15/18	8/15/18	0.00	0.00	DC		
270	Packaging	1 pcs	8/15/18	8/15/18	0.00	0.00	Packaging3-2		
280	QC21-FG	1 Ea	8/15/18	8/15/18	0.00	0.00	QC21		

Part Op 120 - Bend tube as per Dwg D407-667-145 using CNC bender program 407-fw

Descriptions: 140 - ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED BY: ***** 1- Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D407-667-145. Drill all (3) top holes. Holes facing inboard. 2- Drill Fwd rivet holes using drill Jig DT8787 fwd as per Dwg D407-667-145. 3- C'sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint. 4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins .Drill ONLY 2 top holes ONLY plug most bottom holes to prevent accidental drilling. 5- Drill holes and ream using drill Jig DT8541 & DT8542 as per Dwg D407-667-145. Drill only the top (2) holes. 6- Drill Aft rivet holes using drill Jig DT8787 aft as per Dwg D407-667-145. 7- C'sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint. 8- Scribe part # and batch # using vibrating stylus as per Dwg D407-667-145 9- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-145

150 - ***IMMEDIATELY AFTER GRINDING***

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>180 862</u> Part No. <u>0407-667-105</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☒</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☒	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Description Work Order Deviation				Disposition																																																																			
<u>Tube is bent narrow & high on one side.</u>				<u>SCRAP. Tube is too narrow & uneven.</u> <u>18/11/24</u>																																																																			
				Completed By DAS 9 18-11-09																																																																			
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		OTHER : _____																																																																					

180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** OUTSIDE SERVICE -CROSSTUBES Liquid Penetrant Inspection as per QSI 038 Or Level 2 Attach copy of NDT results to work order

190 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for transit damage

200 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D206-667-145

210 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** MASK AREA PRIOR TO PAINTING AS PER DWG AND DEO*** PRIME BATCH: _____ PAINT BATCH: _____

220 - Then, Wrap in plastic bag to protect from scratches

230 - 2-Install supports with Proseal 890 per D407-667-145 (DEO) and QSI 015 3-Install supports clamps Using Dt9565 as per Dwg D407-667-145 (DEO), Torque to 80-100 IN-LBS. 4-Install nut plates as per Dwg D407-667-145. Touch-up rivet heads with Imron paint.

240 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***

265 - Photocopy bluefile and create labels as per PPP D407-667-105 CHG005

270 - Identify and pack for shipping as per PPP D407-667-105 Location : FG097

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D407-667-105TRN	Crosstube Turning Detail	1 Ea (1 ea)	90-Start up Operation	
D206-667-017	Grounding Strap	1 Ea (1 ea)	230-Crosstubes	
D2873-043	Nut Plate Assembly	2 Ea (2 ea)	230-Crosstubes	
D2873-045	Nut Plate Assembly	2 Ea (2 ea)	230-Crosstubes	
D2891-1	Support 2.25	2 Ea (2 ea)	230-Crosstubes	
D3595-063-395	Rubber Cushion 0.63" Wide X 3.95" Long	4 Ea (4 ea)	230-Crosstubes	
MS20601-AD4W10	Rivet	14 Ea (14 ea)	230-Crosstubes	
MS21920-20	Clamp	4 Ea (4 ea)	230-Crosstubes	
AN5-10A	Bolt	10 Ea (10 ea)	250-Packaging	
AN5-30A	Bolt	4 Ea (4 ea)	250-Packaging	
AN5-32A	Bolt	4 Ea (4 ea)	250-Packaging	
MS21042L5	Nut	4 Ea (4 ea)	250-Packaging	
NAS1149D0563J	Washer	18 Ea (18 ea)	250-Packaging	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation 230-Crosstubes	D407-667-105TRN	1	5	0
	D206-667-017	1	13	0
	D2873-043	2	117	0
	D2873-045	2	23	0
	D2891-1	2	20	0
	D3595-063-395	4	143	0
	MS20601-AD4W10	14	305	0
	MS21920-20	4	148	0
	AN5-10A	10	207	0
	AN5-30A	4	36	0
250-Packaging	AN5-32A	4	378	0
	MS21042L5	4	856	0
	NAS1149D0563J	18	1,555	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

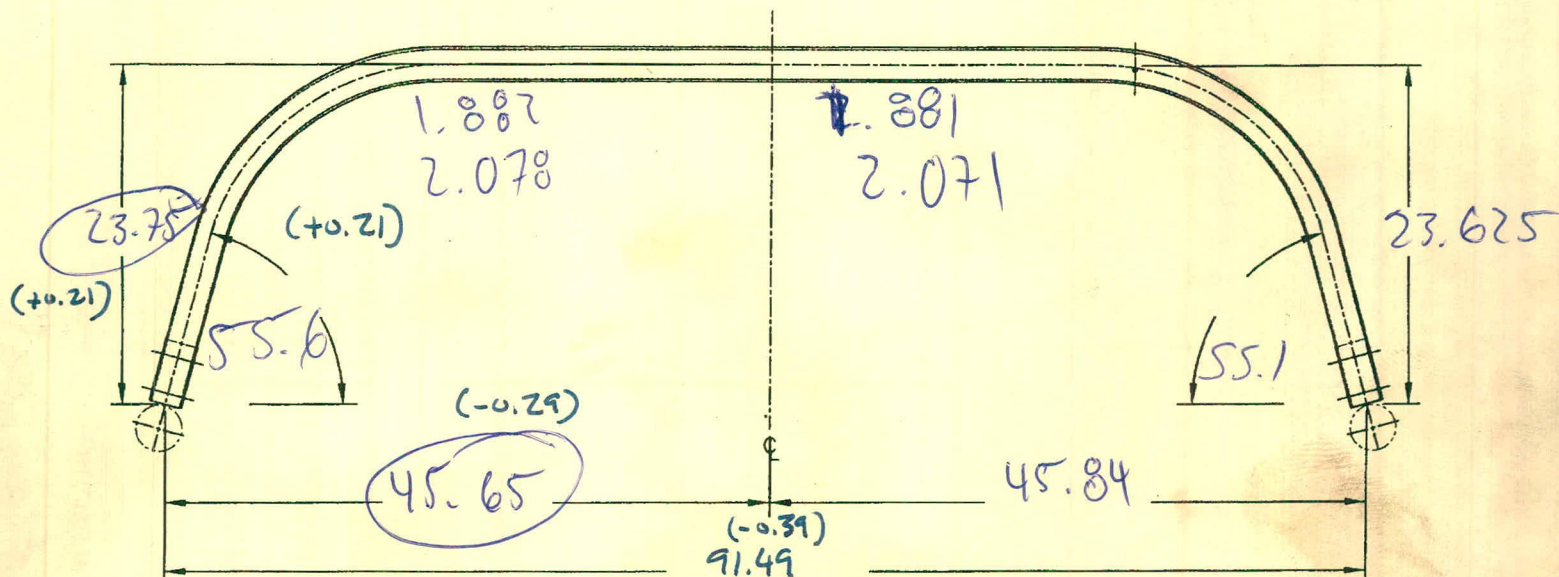
Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS	
Part No. _____		Rework ☐		Slid tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐	
NCR No. _____		Scrap ☐		Quality ☐	
		Use-as-is ☐		Other ☐	
Suspected Unapproved ☐		Ther ☐			
Date : _____		Step #: _____		B (QSI042) Approval ☐	
Description Work Order Deviation				Completed By	
				ad hand / Supervisor	
				approval Verification	
				QC / QA Coordinator	
				Approval	
Root Cause					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Ter ☐	Positioned Wrong	
Design ☐	Operator ☐	Bending ☐	Set ☐	Outside Dimensions	
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BO ☐	Over/Under tolerance	
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Br ☐	Part Incorrect	
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Ins ☐	Part Lost/Missing	
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LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	In ☐	Misread	
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Id ☐	Turning Sequence	
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER : _____			

Container No: S113452
Part: D407-667-105
Job No: 180862
Serial No/Batch: S113452
Revision: D/D
Inspector:
Exp Date:
Instructions: TC STC SH01-5 Issue 3
Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 813 632-6200
Email: sales@dartaero.com
www.dartaerospace.com

DART AEROSPACE LTD		Work Order:	180862
Description: Crosstube High Fwd (407)		Part Number:	D407-667-105
Inspection Dwg: D407-667-145 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	23.41	23.67
1/2 Span	45.81	46.07
Angle	54	56
Total Span	91.62	92.14
Bending Passes	6	--
Crushing	--	6%



	Side A	Side B
Bending Passes	11	13
Crushing	4.7%	4.8%
Comments		

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.12	Dimensions updated per Dwg Rev C	KJ	
C	12.04.16	Added bending, crushing dimensions	KJ	
D	12.10.30	Revised Total Span dimensions & Dwg Rev	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6010-115
FINISHED LENGTH = 113.20±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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WORK ORDER
NO. 180862 1807-17

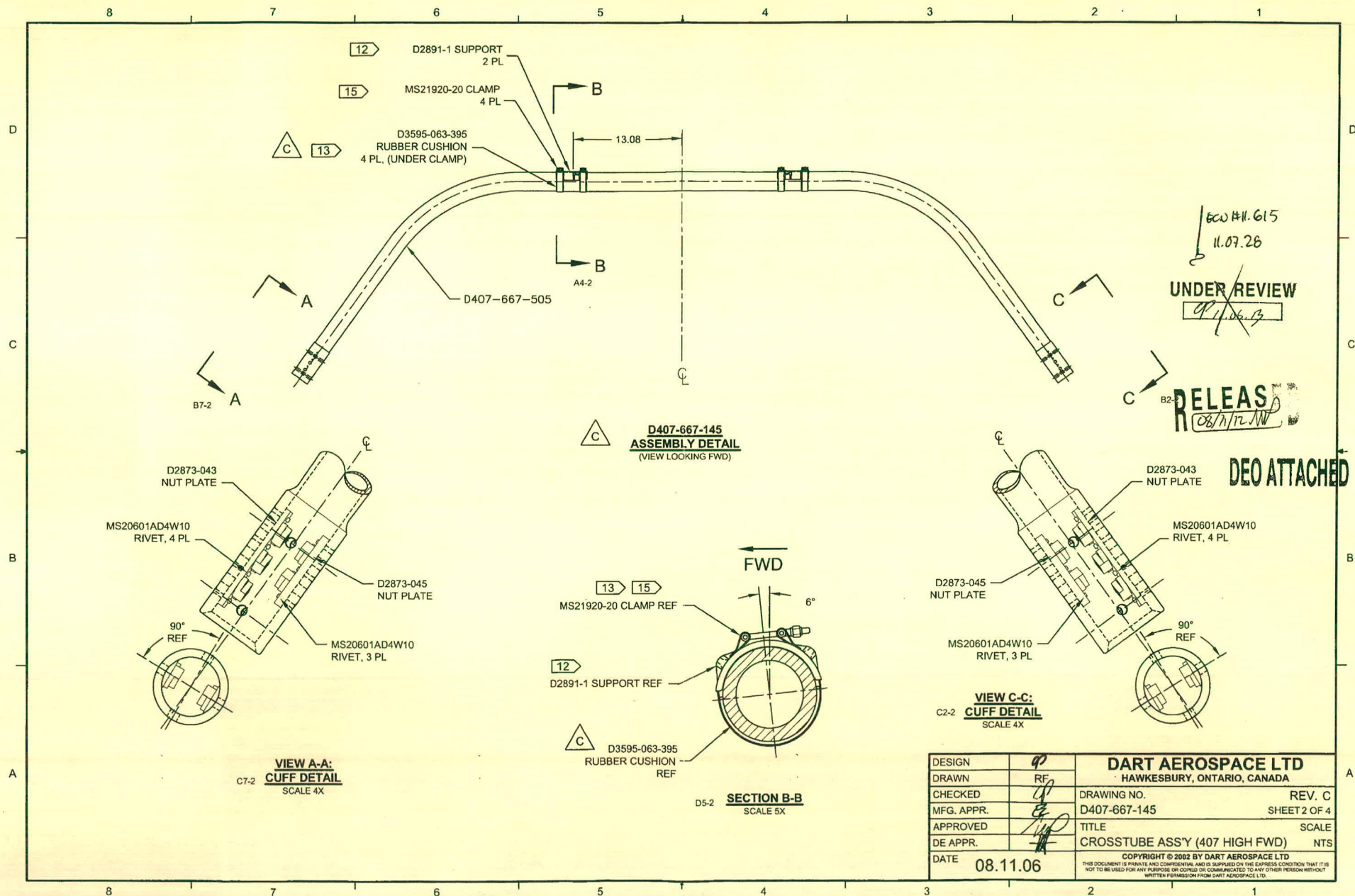
DEO ATTACHED

ECW #11-615
11.07.26

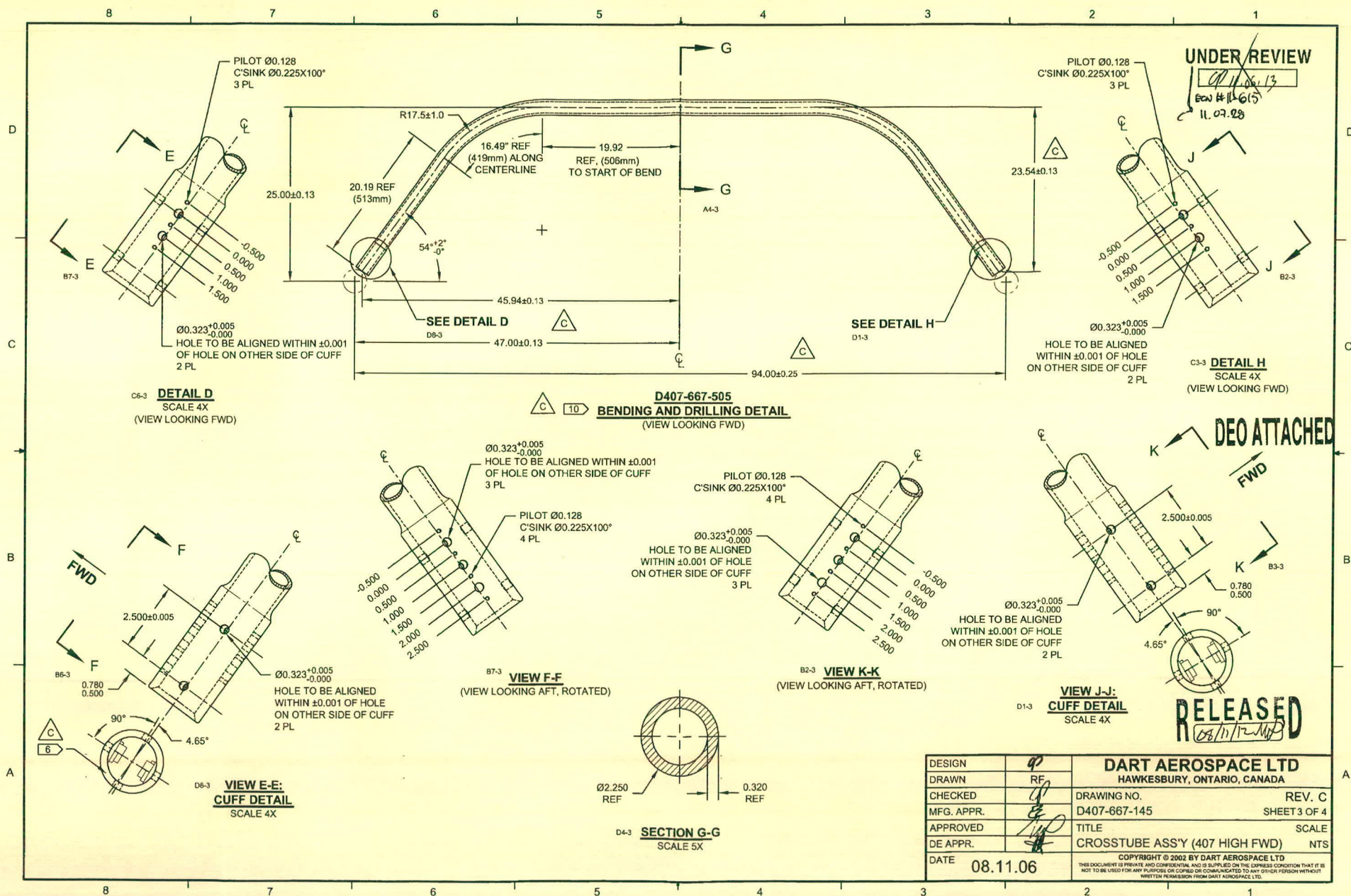
UNDER REVIEW

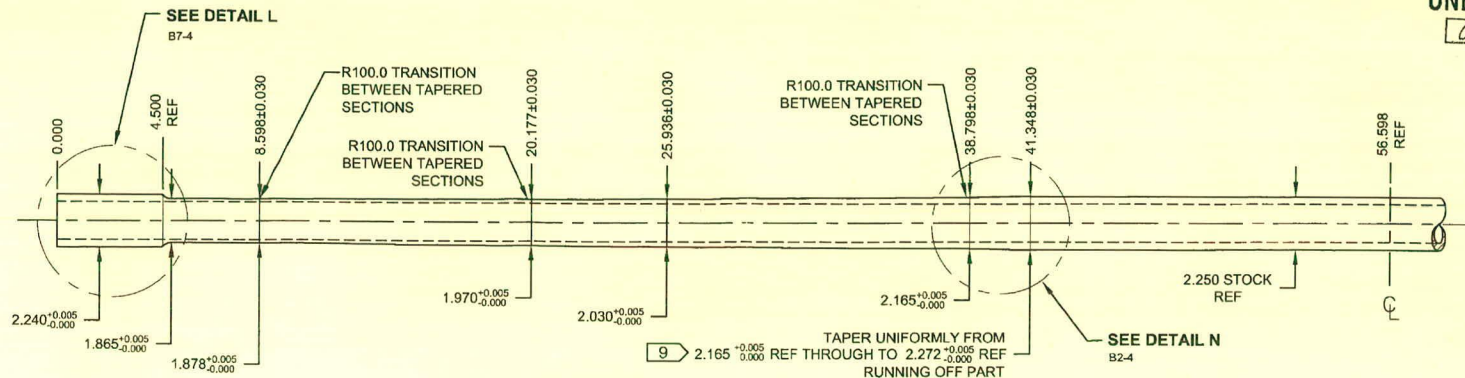
RELEASED
08/11/12

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3, D2-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	02.05.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D407-667-145	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (407 HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

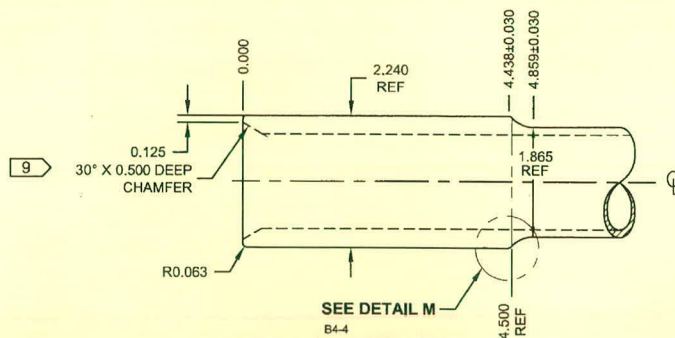


DESIGN	40	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	40	DRAWING NO.	REV. C
MFG. APPR.	40	D407-667-145	SHEET 2 OF 4
APPROVED	40	TITLE	SCALE
DE APPR.	40	CROSSTUBE ASSY (407 HIGH FWD)	NTS
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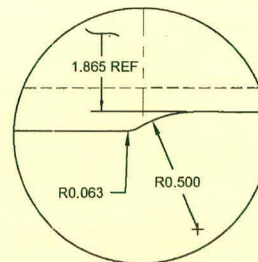




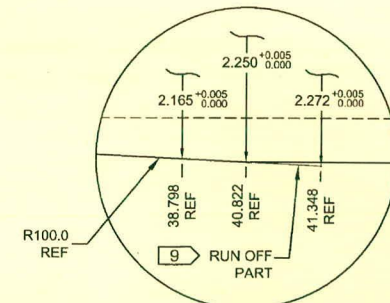
C TURNING DETAIL



DETAIL L:
D7-4 CROSSTUBE CUFF
NOT TO SCALE



DETAIL M:
B6-4 CUFF TRANSITION
NOT TO SCALE



DETAIL N:
C3-4 TAPER RUN-OFF
NOT TO SCALE

DEO ATTACHED
RELEASED
08/11/2006

DESIGN	CP	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. C
MFG. APPR.	CP	D407-667-145	SHEET 4 OF 4
APPROVED	CP	TITLE	SCALE
DE APPR.	CP	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD	
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DRAWING NO. D407-667-145	TITLE CROSSTUBE ASS'Y (407 HIGH FWD)	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D407-667-145-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>q</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>IB</i>	APPROVED <i>WD</i>		DE APPR. <i>#</i>		
DATE 11.07.15	DATE 11.07.22	DATE 11.07.22	DATE 11/07/22		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -145	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2891-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28
WD

DRAWING NO. D407-667-145	TITLE CROSSTUBE ASS'Y (407 HIGH FWD)	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D407-667-145-C-2	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN AJS	CHECKED	MFG. APPR.	APPROVED	DE APPR.			
DATE 12.08.02	DATE 12.08.02	DATE 12.08.02	DATE 12.08.02	DATE 12.08.02			

PURPOSE:

ADD ELECTRICAL GROUNDING STRAP

CHANGE:

ITEM	QTY	PART NUMBER	DESCRIPTION
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
10	2	AN742D36	CLAMP
11	2	MS9165-05	ANGLE BRACKET
12	2	MS21042L3	NUT (OR MS21042-3)
13	2	MS27039-1-08	SCREW
14	4	NAS1149C0332R	WASHER (OR AN960C10L)

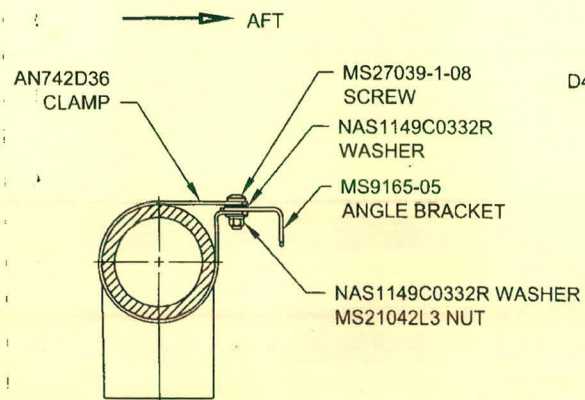
ADD

GENERAL NOTES:

- 16) MASK AREA UNDER CLAMP PRIOR TO PAINTING
- 17) SEAL EDGES WHERE AN742D36 CLAMP MEETS WITH THE CROSSTUBE USING SIKAFLEX-241/-291 OR MIL-S-8802 CLASS B2 OR PROSEAL 890 SEALANT
- 18) PERFORM RESISTANCE CHECK TO ENSURE MAX RESISTANCE IS 10 MILLIOHMS

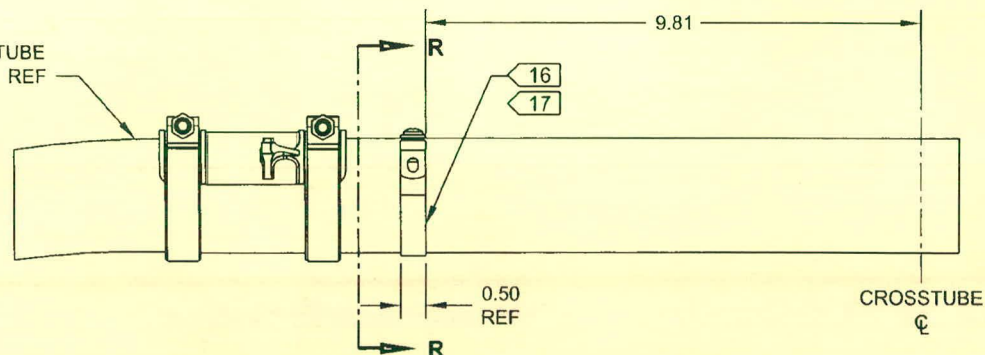
ADD

RELEASED
CP 12.08.17
ECN 12-631



SECTION R-R

D407-667-505 CROSSTUBE REF



DETAIL P
BONDING STRAP INSTALLATION 2 PL

